Writings in Gerontology

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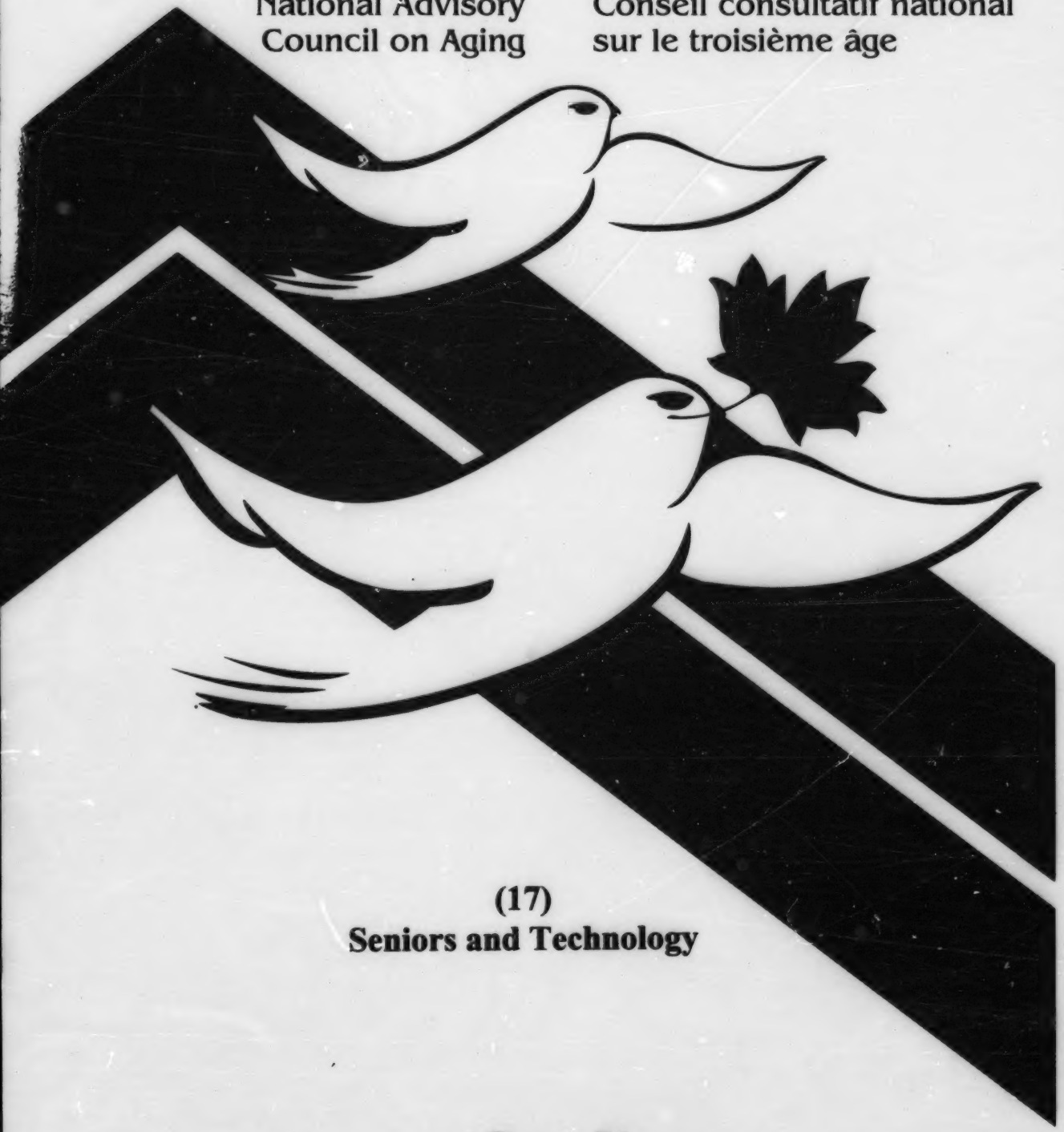
National Advisory Council on Aging

Conseil consultatif national sur le troisième âge



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September 2001
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WHAT IS THE NATIONAL ADVISORY COUNCIL ON AGING?

The National Advisory Council on Aging (NACA) was created by Order-in-Council on May 1, 1980 to assist and advise the Minister of Health on issues related to the aging of the Canadian population and the quality of life of seniors. NACA reviews the needs and problems of seniors and recommends remedial action, liaises with other groups interested in aging, encourages public discussion and publishes and disseminates information on aging.

The Council has a maximum of 18 members from all parts of Canada. Members are appointed by Order-in-Council for two- or three-year terms and are selected for their expertise and interest in aging. They bring to Council a variety of experiences, concerns and aptitudes.

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TABLE OF CONTENTS

Foreword 1
Preface 2
About the Authors 3

INTRODUCTION 7
The Benefits and Barriers of Technology 9
Overview of Articles 10
References 13

EVERYDAY TECHNOLOGY AND OLDER ADULTS: FRIENDS OR FOES?
(J. Jessome, C. Parks, M. MacLellan)
Introduction 16
Findings 16
Conclusion 18

DIGITAL DIVIDE OR DIGITAL DIVIDEND? ENSURING BENEFITS TO SENIORS FROM INFORMATION TECHNOLOGY (S. Brink)
Introduction 20
Why is Technology such an Issue 20
Understanding Information Technology 20
Information Technology Changes the Way we Live 22
Information Economy 22
Information Society 23
Impacts of the Information Economy and Information Society 24
The Digital Dividend 24
The Digital Divide 25
Reasons Why Seniors May Not Use Information Technologies 27
Implications for Seniors 28
Conclusion 29
References 31

TECHNOLOGY AND OLDER ADULTS: A SENIOR'S PERSPECTIVE (J. Ryan)
Introduction 34
The Telephone 34
Voice Mail 35
Price Scanners 35
Bank Machines 36
Other Banking Systems 36
Other Uses of Computers by Seniors 37
Conclusion 38

INCREASING THE PACE OF INNOVATION TO MEET PRODUCT AND SERVICE NEEDS OF OLDER CONSUMERS (G. E. West)
The Place of Older People in the Consumer Market 40
A Tidal Wave of Business and Consumer Change 41
Travel/Leisure Industry Failings 45
Automobile/Transportation Industry Failings 45
Food Industry Failings 46
How to Increase the Pace of Change 47
References 48

OLDER ADULTS' USE OF TECHNOLOGY TO MAINTAIN READING AFTER VISION LOSS (E. Bouchard Ryan, S. Bajorek, A. P. Anas and M. Beamer)
Impact of Visual Loss on Reading 52
Reading for Leisure and Productivity 52
Reading for Everyday Activities 52
Assistive Technologies Related to Reading 53
Social Issues Regarding Visual Impairment and Technology 55
Final Comments 56
References 57

COUNTRY ROADS: CONNECTING OLDER RURAL CANADIANS (D. King)
Introduction 60
Creating Connections 61
Spotting the Signposts 63
Different Country Roads 66
References 67

FIGURES

Figure 1. **Households Equipped to use Internet - Canada, 1996-1999** 22
Figure 2. **Figure 2. What Is the Internet Used For?** 24
Figure 3. **Increasing Digital Divide - Internet by age, Canada, 1997-1999** 26
Figure 4. **Percentage of Households with Computers, 1990-1997, Canada** 27
Figure 5. **Age of On-line Shoppers, Canada, 1999** 28
Figure 6. **The Baby Boom Tidal Wave Moves Through the Marketplace** 44

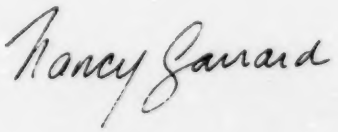
FOREWORD

The *Writings in Gerontology* Series is intended as a vehicle for sharing ideas on topical issues related to the quality of life of seniors and the implications of an aging population. It is produced as part of the National Advisory Council on Aging's mandate to publish and disseminate information and to stimulate public discussion about aging.

The Council endeavours to ensure that the articles in the series provide useful and reliable information. Most of the texts are original manuscripts. Some are written by Council staff, others by experts in their fields.

This series is addressed to seniors and the people who care about their well-being. It is hoped that readers will find the *Writings* useful.

The Council welcomes comments on the topics selected, as well as on the contents of the articles.



Nancy Garrard
Director
Division of Aging and Seniors

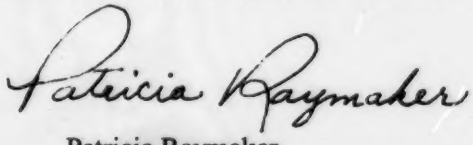
PREFACE

The National Advisory Council on Aging is pleased to present this current issue of *Writings in Gerontology* which focuses on the issue of everyday technology and seniors. While there is real potential for technology to promote seniors' independence and social participation, NACA believes that for seniors to benefit fully from technology, the products of technology must be developed and designed in ways that recognize the diversity of seniors and their right to make choices about their use. If technology is to benefit seniors, our society needs to promote receptivity and access by addressing the problems of lack of awareness about the benefits, high costs and attitudinal barriers.

This issue of *Writings* is the result of a partnership between the Nova Scotia Centre on Aging (NSCA), Mount Saint Vincent University and the Council. Over the past few years, the NSCA has developed an expertise in regards to technology and older adults. In 1999, with funding from Health Canada, the NSCA undertook the project, *Everyday Technology and Older Adults: Friends or Foes?* In recognition of the interest and range of issues generated during the course of this project, the NSCA approached NACA with the idea of providing a forum for conveying the concerns of seniors regarding the role technology plays in the independence and everyday life of seniors.

In presenting the papers contained in this publication, NACA hopes to communicate the project findings to a larger audience and to stimulate an interest in technology skill-development among seniors. By increasing awareness of the impact of new technologies on the lives of seniors, NACA also hopes to encourage action by government and industry to decrease the "digital divide", so that all Canadians can benefit from technological innovations.

NACA would like to thank the NSCA for its initiative, which made this publication a reality, as well as the authors of the papers for presenting so clearly the challenges facing seniors and helping to stimulate interest, discussion and action in this field.



Patricia Raymaker
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- **Ann P. Anas** is Research Coordinator of the Communication and Aging Project directed by Ellen Bouchard Ryan at McMaster University.

- **Selina Bajorek** has recently completed the MSW program at the University of Toronto. Her main interests pertain to effective coping with visual impairment in mid-life and the associated changes in the meaning of independence. She facilitates a peer support program for older adults through the Canadian National Institute for the Blind.

- **Miranda Beamer** recently wrote her Gerontology Honours Thesis at McMaster University on reading and age-related visual impairment and is currently an Occupational Therapy Assistant working with older adults.

- **Ellen Bouchard Ryan** is Professor in Psychiatry and Behavioural Neurosciences and in Gerontological Studies at McMaster University in Hamilton, Ontario. Her main research interests concern communication and aging, ageism, successful aging with visual and hearing impairments, and computer applications for older adults. Her research program is funded by the Social Sciences and Humanities Research Council.

- **Satya Brink** has her doctorate in Environmental Sociology and specializes in the relationship of people during various stages of the lifespan to their social, economic and residential environments. With that focus, she has worked to link design, research and policy, whether working in the private sector, the academic sector or the public sector. Her forte is policy research on children, the elderly and disabled people and international policy comparison studies. The editor of two books and author of over 20 book chapters, she has also produced reports to governments and international organizations and published articles in professional journals in five languages. She has worked for various ministries of the Government of Canada for about 20 years as a researcher and policy analyst. She serves as adjunct professor at the Gerontology Research Centre, Simon Fraser University, Vancouver. Currently she is Acting Director, Child, Youth and Social Development Studies, at Human Resources Development Canada.

- **Jeannine Jessome** is Project Coordinator for the *Everyday Technology and Older*

Adults: Friends or Foes? Project, coordinated by the Nova Scotia Centre on Aging (NSCA), Mount Saint Vincent University and funded by Health Canada's Population Health Fund. With a background in gerontology, she holds a Master of Arts in Education- Adult Education, and is part-time faculty with the Graduate Adult Education Program at Mount Saint Vincent University. Previously, she worked as an instructor and curriculum developer for a private trade school offering training for front-line health care professionals. Her primary interests focus on learning in later life.

- **Donald King** is Division Head of the Seniors' Education Centre, Centre for Continuing Education, University of Regina, and as such has presented papers at national and international conferences on older adult issues and has been invited to participate in several face-to-face and computer mediated national forums. A former Winnipeger, he has been an educator for 35 years in Regina at Luther College and at the University of Regina and has been involved in and/or supervised applied research and community development work in a number of areas affecting older adults: poverty, abuse, literacy, rural distances, learning technologies, intercultural relationships, caregiving, quality of life, and seniors serving seniors. King has been a member and served on the boards of various provincial, national and international educational organizations. In recognition of his work as an educator, he received a 125th Anniversary of the Confederation medal in 1992 and an honorary doctorate in 1993. An active volunteer with Boy Scouts, UNICEF, Red Cross, and as coach for various children's sports teams, he is married to Pat and they have four children, six grandchildren, two granddogs and one grandcat.

- **Marlene MacLellan** is the Associate Director of the Nova Scotia Centre on Aging, Mount Saint Vincent University and teaches in the Department of Family Studies and Gerontology. She holds a Master of Arts in Human Ecology. Particular interests are in family caregiving and issues related to quality of life for older adults. Her research expertise relates to issues of autonomy and care for residents in long term care settings; future planning issues for older parents who are caring for adult sons/daughters with lifelong disabilities; supports for family caregivers;and project evaluation studies, including the demonstration project for the RAI 2.0 standardized assessment tool for nursing home residents. She has participated on several working committees to develop recommendations for the

provincial government on issues related to the support of family caregivers, respite care, expectations of recipients of health care services, accountability, and palliative care in continuing care facilities. She is committed to linking research and policy development, evident through dissemination activities, reports, and strategic local, provincial, regional and national project partnerships.

- **Clare Parks** is Project Assistant for the *Everyday Technology and Older Adults: Friends or Foes?* Project, and has worked on a number of other projects at the NSCA. She is currently coordinating the development of a series of educational tools dealing with technology and intended for older adults. Her work in the field of qualitative research began when she graduated with a Master of Arts in Sociology and Social Anthropology.

- **John Ryan** is a retired pharmacist (1995), a Veteran of the Korean War, and has been involved in volunteer activity for almost 40 years. He is a member of the board or committee member of several not-for-profit organizations including: Canadian Cancer Society, United Ostomy Association, St. John Ambulance Society, Halifax Visiting Dispensary, Canadian Foundation for Pharmacy, Canadian Pensioners Concerned, Dartmouth Seniors' Service Centre, and the Atlantic Seniors' Health Promotion Network. John is also Honorary Life Member of the following organizations: Canadian Pharmacists' Association, Nova Scotia Pharmaceutical Society, Pharmacy Association of Nova Scotia, Association of Faculties of Pharmacy of Canada and the New Brunswick Pharmaceutical Society. He has also been involved in the development of Computer programs for Pharmacies and is Co-chair of Seniors' Community Access Program cluster for Seniors in Nova Scotia (Halifax Regional Municipality).

- **Gale E. West** received a Ph.D. in Sociology with a specialization in Applied Social Gerontology from Iowa State University in 1987. After briefly teaching with the Gerontology Program at McMaster University, she accepted a faculty position in Consumer Sciences at Laval University in 1992. She teaches a course on consumer issues in aging from both an individual and societal perspective. Her most recent research has focused on the contribution of food and food services to the quality of life and autonomy of long-term care residents.

INTRODUCTION

It is our pleasure to introduce this volume of *Writings in Gerontology* which focuses on the social and ethical implications of the impact of technology on the lives of older Canadian adults. Since April 1999, the Nova Scotia Centre on Aging (NSCA), Mount Saint Vincent University, has been conducting the *Everyday Technology and Older Adults: Friends or Foes?* Project funded by the Population Health Fund of Health Canada. Now in the final year of the project, the Nova Scotia Centre on Aging is honoured to collaborate with the National Advisory Council on Aging (NACA) in producing a collection on this critical topic.

If we define technology as the "application of human knowledge and ingenuity to a task or problem" (National Advisory Council on Aging, Expression, Vol. 12), it stands to reason that the current rate of technological innovation in our everyday lives should have virtually eradicated the ills that face our society. However, we know this is not the case. Although technology has certainly improved, extended, and enriched our lives, it has complicated and limited them in many ways as well.

From the joy of e-mailing a grandchild to the frustration of losing your way in a telephone menu, technology underscores just about everything we do. In this collection, we focus specifically on everyday technologies, referring to those technologies that are increasingly becoming embedded in our daily transactions and lives such as automatic banking machines (ABMs), voice mail, automated telephone menus, and access to health information and services. Commercial industry, financial institutions, and all levels of government are moving towards more and more automation of both services and access to information. As the aging population grows over the next thirty years, the positive as well as the negative effects of everyday technologies will be amplified. Issues of marginalization, access to services and social isolation are all associated with increasing automation and must be addressed now. As White and Weatherall point out, "If older adults are to play an equal part in our increasingly technological societies, then consideration must be made of the effect on and use of IT [information technologies] in their lives " (2000, p. 372).

A review of the literature related to older adults and technology reveals a multitude of articles and discussions related to older adults and computer use but scant reference to the use and impact of everyday technologies. The lack of formal discussion regarding everyday technologies represents both a critical void and an unbalanced focus within the literature.

The use of everyday technologies is increasingly forced upon us, unlike the use of computers, Internet and e-mail, which is clearly a matter of choice, associated with certain determining factors. As Zimmer and Chappell indicate, "... predisposing factors, such as age, education, income, place of residency, gender, previous experience with technology, and home ownership have been shown to be important determinants of technological utilization and hence likely receptivity" (1999, p. 223).

Unfortunately, there are not many statistics regarding older adults and their use of everyday technologies. However, Howatson-Leo and Peters point out that the 1994 General Social Survey data indicate that, "The elderly and those with low levels of education and income are at the greatest risk of being isolated by the ways in which services are provided"(1997, p. 226). Yet, latest statistics identify older adults as one of the fastest growing groups of consumers purchasing computer technologies and accessing the internet. Despite the "hype" surrounding this trend, the actual numbers are still quite low.

Interestingly, some research has indicated that age may not necessarily be a determinant of using or owning a computer. Income and educational levels, as well as an open and positive attitude towards technology, are identified as more significant determining factors. However, while thousands of older adults are discovering and maximizing the benefits of technology, many more are either choosing not to "connect" or struggling to gain access.

In addition, anecdotal evidence and subsequent project findings support the claim that many older adults, primarily those over the age of 70, are turning away from services offered through automation. One explanation for this side-stepping of technology may be found in the fact that today's older adults have not had as much exposure and

interaction with technology in their workplace or in their day-to-day transactions.

> *Older adults of today have lived through a radical transformation of their technological environment... Homes are now equipped with video cassette recorders (VCRs), microwave ovens, satellite televisions, home alarm sensors, home computers and a barrage of communication devices, all unknown to today's cohort of older adults while they were growing up* (Zimmer and Chappell, 1999).

Although older adults as a group may not have had as much exposure to rapid technological development, it is important that they be recognized as a vital consumer group which will purchase and access these technologies. Older adults contribute to the economy through purchases, donations, and unpaid labour and volunteer work. Statistics clearly show older adults are a population group 'to be bargained with'. According to the most recent census data older adults spend more on gifts and charities than other age groups (Lindsay, 1999). Seniors also tend to be the most loyal customers to a business if they receive fair service and respect.

The implications for older adults who are not able, or choose not to use everyday technologies or computers are not yet entirely clear. The question needs to be asked in our society. Certainly, there is evidence of a growing gap between those who have access to technology and those who do not— the 'digitally divided'. Some feel that technology offers "opportunities for expanded access to and participation in the economic, social and cultural life" (Howatson-Leo and Peters, 1997, p. 226). Those who do not use technological innovations will surely begin to fall behind or miss out on services. Successfully navigating the automated and technical world of business and government today requires familiarity, skill, and patience. The social consequences of a growing gap between the 'techno-haves' and the 'techno-have-nots' may further marginalize the very groups that stand to benefit the most from the 'technological revolution'.

The Benefits and Barriers of Technology

Thanks to technology, some see the world as a 'global village' where products, food and art from remote areas of the globe find their way into our homes. Everyday technologies

can present obstacles, but they can also provide innumerable benefits and opportunities for continued learning and growth, as well as convenience. Banking services on the Internet or the telephone provide 24 hour access and offer greater autonomy and control over one's affairs particularly if mobility and access to a bank branch is limited or impossible. The Internet also offers health information and a multitude of opportunities to take courses on-line making issues of distance and transportation irrelevant.

Mastering new technologies can be empowering and evoke feelings of accomplishment and satisfaction, as well as greater self-esteem. A willingness and openness to learning about and attempting new technologies can definitely optimize the benefits for all generations. However, we need to address the barriers and the unevenness of access associated with technology, especially when it has the potential to increase independence and improve the quality of life for aging members of our society. Some of the barriers that may prevent older adults from experiencing the benefits of technology are: individual sensory or mobility changes coupled with poor design, negative stereotypes of aging and older learners, cost of equipment, lack of training or education, and lack of access. The following chapters provide excellent discussions and analysis of these barriers and their impact.

Overview of Articles

Our article on the project *Everyday Technology and Older Adults: Friends or Foes?* is a short synopsis of the method used to collect data, the findings and the recommendations to industry and older adults. Throughout the project, we saw the myth that seniors dislike technology debunked while recognizing why older people might mistrust the new technologies. Our conclusion is that older adults must be consulted in the planning, testing and implementation stages of new technologies.

Satya Brink's article, *Digital Divide or Digital Dividend? Ensuring Benefits to Seniors From Information Technology*, poses and explores the question of whether seniors will benefit or lose from the information technology revolution. Brinks asserts that the benefits will be unequally distributed throughout society and certain groups such as seniors may fall on the "wrong side of the digital divide" because of less access to technology and a slower rate of adoption. The author differentiates between "industrial technology" which is

based on mechanical devices, and "information technology" which relies on electronic devices, noting that the former enhanced efficiency and speed of industry while the latter does the same for the human brain. She concludes that an equitable distribution of the benefits of technology is more likely to occur with concerted public policy intervention to counter the barriers of cost , lack of access or education, and geographic isolation.

In his article, *Technology and Older Adults: A Senior's Perspective*, John Ryan writes about seniors' use of and encounters with technology in three domains: personal, business and health. He contends that although some seniors feel threatened by technology, others view it as a challenge or an opportunity. He attributes seniors' fear of technology to socioeconomic factors, such as education, income, gender and the changes in traditional family structure and describes the benefits and drawbacks of some everyday technologies, appealing to government and industry to respond to seniors' concerns.

Gale West's article, *Increasing the Pace of Innovation to Meet the Product and Service Needs of Older Consumers*, is a clear call to action for industry and older consumers alike. After examining the historical failings and slow reactions of several industries in meeting the needs of older adults, she goes on to note two major forces that are changing the face of the marketplace. First, the large and rapidly aging boomer generation will require products and services not yet adequately developed or marketed, and secondly, the growing strength and power of the senior consumer advocacy movement will expect technological solutions to "modify existing and create new products and services with their needs in mind."

In the article, *Older Adults' Use of Technology to Maintain Reading after Vision Loss*, Ellen Bouchard Ryan, Selina Bajorek, Ann P. Anas, and Miranda Beamer first draw attention to the impact of visual loss and the significance of reading ability to our quality of life. They then present an in-depth overview of assistive technological devices, which enable older adults with vision loss to overcome or at least lessen the impact of their disability on their reading. The authors go on to note the technological and social barriers that prevent optimization of the available technology by those with vision loss. Inadequate training, jargon-laden language and the complexity and unpredictability of computers hinder ready adoption of the aids. Social issues such as lack of awareness and education, coupled with negative stereotypes of aging and disability prevent many potential users from partaking in the benefits. However, the authors conclude that developments in the universal design of

computer technology offer those with vision loss a positive alternative that does not stigmatize.

In his article, *Country Roads: Connecting Older Rural Canadians*, Donald King uses the metaphor of a country road to frame his discussion of the impact the "Information Revolution" is having in our rural communities. Although technology offers rural or remote communities methods of "connection" never before possible, he notes that older adults in these areas do not have the same access to technology and services as those in urban centres. As road and railroad construction have changed our communities, so will advancements in computer and telecommunications technology. He suggests, however, that we need to pay attention to two important "signposts" as we travel along the information highway or "new style country road" in order to maximize the benefits for **all** Canadians: a new vision of aging and a deeper and more holistic view of access.

We are confident that these articles will provide the reader with a better perspective on the road ahead to ensure seniors' equitable access to the benefits of new technologies.

Jeannine Jessome, Clare Parks, Marlene MacLellan
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EVERYDAY TECHNOLOGY AND OLDER ADULTS: FRIENDS OR FOES?

by

Jeannine Jessome, Clare Parks, Marlene MacLellan
Nova Scotia Centre on Aging, Mount Saint Vincent University

September 2001
National Advisory Council on Aging

Introduction

The *Everyday Technology and Older Adults: Friends or Foes?* Project is a 33- month study involving eight partners from across Canada. Focus groups, in-depth interviews, questionnaires and surveys, popular and academic literature reviews, and Town Halls held across the country represent the primary data gathering effort. From these data, a list of recommendations will be compiled for industry, and educational modules developed for both industry and older adults. The industry module is intended to serve as a resource in making improvements to existing technologies, in developing guidelines for future designs, and in generating ideas for connecting with older adults on these issues. The module for older adults is designed to "demystify" a number of everyday technologies by providing instructions, tips and strategies for successfully navigating these technologies. It will also provide tools which older adults can utilize to have their concerns heard and for working constructively with industry. The project strives to broaden our knowledge of the impact of everyday technologies and to promote understanding between older adults and industry ensuring 'human needs' are not lost in this time of rapid technological change and increased automation.

Findings

During the course of the project, older adults acknowledged the benefits of technology as frequently as they noted the limitations. "I love banking machines. Every time I get in the bank and see 20 people waiting ahead of me, I'm so glad I can use the machine..." (focus group participant). The most common limitation mentioned was the lack of training and support in using the new technologies. Many older adults stated the benefits of technology were of no use if the technology was inaccessible or not easily utilized. This clearly dispels the myth that older adults as a group abhor technology and advancement. It is true that many older adults prefer to conduct a transaction with a person face to face and appreciate the value in doing so, but that does not necessarily preclude their willingness to try alternative methods if the process is beneficial and logical. "The problem is we don't understand that [technology] and we're not given enough information to understand it. If we could learn more about it, probably we'd be a lot happier with it" (focus group participant). Thus, technology is not the problem but rather the ways in which seniors are required to use it.

Many industry representatives realize that older adults have a strong mistrust of the intention and function of automated technologies but admit they are unsure of how to effectively combat this mistrust. Older adults described automated banking and telephone menus as primarily cost saving devices and not initiatives to enhance customer service. As one focus group participant stated, "...you know the banks don't necessarily change technology to convenience [people]. It's to make more profit." Many older customers did

not feel as though they were important or even significant to industries they had supported all their lives. Older adults were also very concerned with the accuracy of automated transactions and did not feel completely reassured by industry's explanations. One participant explained, " I like the contact with the person I am dealing with, not putting my card in the machine and wondering if it's going to come out or not." This mistrust appears to be linked to the lack of education and support regarding the introduction and implementation of new technologies.

Evident in our discussions with older adults and industry was the existence of a 'disconnect' between the two. Both sides admitted attempts to connect on these issues often did not result in constructive dialogue or productive changes. Finding effective ways for industry and older adults to work towards collaborative strategies is a significant challenge especially when faced with the reality of the bottom line and business decision making. Older adults expressed the opinion that industry, in its excitement over a new technology, tend to forget the generic nature of an automated transaction and do not fully consider those individuals for whom the technology has made life more difficult and complex due to a literacy, mobility or sensory loss issue. As one person summarized, "Technology is good for some people."

Older adults' perception of courtesy and the value in human interaction differs from perceptions held by younger generations and industry. The society in which older adults were raised stressed the importance of politeness, appropriate formality, and always being of assistance to one's neighbour and community. Older adults may tend to think more communally about personal and business interactions. For instance, some described voice mail and menu systems as discourteous and indicative of declining social manners. They felt some businesses did not really value their call or business and believed industry no longer truly cared about the individual customer.

Privacy, safety and security were also concerns. They worried that technology enabled easier access to personal information. In addition, convenient technologies, such as cell phones and pagers, while providing important safety features, do invade our privacy and detract from quality of life. Personal safety and security when using ABM's and internet banking were a concern as well.

While praising the benefits of various technologies, older adults questioned the loss of social contact the reliance on technologies can create. For many, a visit to the bank or paying their bills in person to a place of business is a social interaction as much as a business transaction. At a time of life where social networks may be decreasing, these transactions provide some older adults with a sense of purpose and important social connection with others in their communities. Loss of independence was also a concern. "We were talking about automation taking away our independence as persons because we would like to do a

few things for ourselves and the machine will do everything for you if you ask it. So you lose your independence little by little" (focus group participant).

While technology can create substantial opportunities for connection with others, for example e-mailing family members at a distance, it can lead to social isolation by replacing human interaction with the "efficiency" of an automated transaction. With social isolation already a concern in terms of the older population, there are fears automated banking methods, voice mail, automated telephone menus, computers, and the Internet will further contribute to and compound this reality.

Conclusion

Technology needs to mesh consumer needs with logical function, not divide populations. As a society we must work together to develop and foster technological egality and equality. Older adults' opinions must be included in the dialogue, planning, testing and implementation of new technologies. Older adults represent a valuable voice of reason that must be heeded. As one person commented: "I mean what is the point in having technology if the technology is not going to be understood and be helpful for us."

DIGITAL DIVIDE OR DIGITAL DIVIDEND? ENSURING BENEFITS TO SENIORS FROM INFORMATION TECHNOLOGY

by

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September 2001
National Advisory Council on Aging

Introduction

Canada is among the leading countries shifting from an economy based on industrial technology to one based on information technology. The world Economic Forum ranked Canada first among G7 countries for its technology potential (Global Competitiveness Report, 1997). When the use of technology permeates society, all members are likely to benefit from its use. If technology is only available to some Canadians, the benefits will be inequitably distributed, resulting in a new cause for disadvantage.

It is evident that Canada will benefit from the information technology revolution, but will seniors benefit or lose? Second, if seniors are negatively affected, will it be a temporary phenomenon until the societal transformation is complete? Third, will such a societal transformation result in a change in social order between generations?

Why is Technology such an Issue?

In the past, industrial technology meant *mechanical* devices, which increased physical capabilities of people. It spared them from the performance of heavy, continuous or repetitive tasks, compensating for or enhancing physical or sensory abilities resulting in improved speed, efficiency or safety. Most labour-saving appliances and transportation were the result of industrial technology. The evolution of technology in the latter part of the century resulted in *electronic* devices which extend the potential of the human brain by increasing thinking power, by taking routine decisions, by storing, retrieving or dispersing information globally and by making time and distance irrelevant. While industrial technology improves the ability to perform daily activities, information technology enhances the quality of life by linking people to other people, to bodies of knowledge and to opportunities beyond their immediate social and geographical circle.

Understanding Information Technology

"Information" and "technology" are common words and telephones and televisions have been in use for decades. So why is "information technology" new? There are three reasons. First, by making information digital (coded in 0s and 1s) we are able to generate, process, store, transmit and manipulate information in the form of data, text, sound and images by using the same means. Second, the use of digital code resulted in "convergence" - that is, we can transmit and receive images, voice, data or text through a variety of digital communication technologies (or digital devices) such as the computer, telephones and televisions. This is why it is now possible to take a picture using a digital camera, see it on a television screen and send it to a friend by e-mail using a modem - something which could not be done before. Third, because the modem can connect with the Internet or with wireless

communication devices, such as satellite transmitters, we can access information any time from anywhere.

Digital devices have increased the flexibility, accuracy, immediacy, geographic independence, volume and complexity of the information we can access. Because vast amounts of data can be collected and organized into information, the amount of information available is doubling every year. Information can be checked and consolidated to create knowledge, which has resulted in a high degree of connectedness between knowledge, experience and media. Such knowledge is held by individuals and networks of people. Thus, it is important that people are able to acquire information, manipulate it, share it and use it for their personal benefit as well as for the general benefit of society.

The Internet, a world wide network of networks, permits users at any computer to link to information from any other computer. The Internet is a public, co-operative, self-sustaining network that is a major facilitator of the storage, retrieval and exchange of information. The most widely used part of the Internet is the World Wide Web, which allows instant cross-referencing so that it is possible to track information from one source to another. The strengths of the Internet are the three Cs: content, commerce and community. People can benefit from the exchange of information, from the trade of goods and services and from a network of social relationships with people that they may never meet face to face. The Internet encourages new forms of shared memory and accumulation of human knowledge. In the coming decade, it is likely that wireless digital devices will surpass computers that rely on telephone lines or cable for accessing the Internet. Wireless communication is likely to contain less visual information, such as pictures, but be more focused on the quick transfer of information.

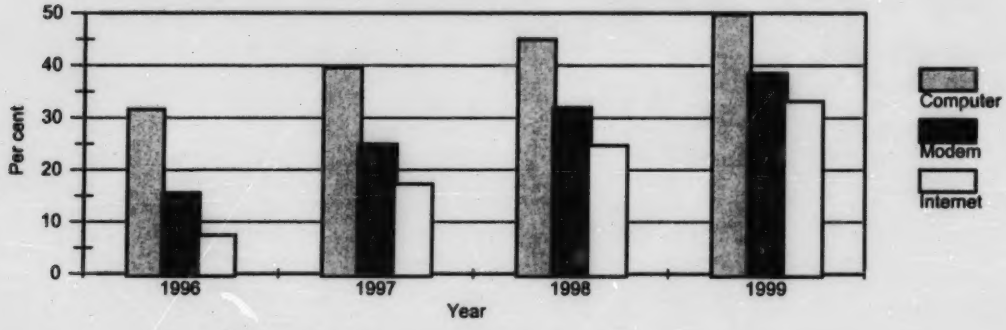
But digital devices are not the only means to benefit from information technology. Information technology is driven by "chips" which contain integrated circuitry. Though people widely believe that computers are the symbol of information technology, it is the chip that is transforming our lives. Such chips are programmed and imbedded in most of the products that we use and are involved in the delivery of most of the services that we buy. The imbedded controller chip can manage a complex series of operations when the user chooses a desired result by pushing a button or turning a dial. By selecting a "pots and pans" cycle on a dish washer, for example, the choices of water temperature, soak and wash time will be determined automatically by the programmed chip in the machine. When information technology is combined with products and services of industrial technology, these products or services are called "intelligent" or "smart". In 1990, the typical home had roughly 75 controller chips (which managed a complex series of operations when the user chooses a desired result by pushing a button or turning a dial) while the estimate for the year 2000 was 225 such chips (The Economist, 1994).

Information Technology Changes the Way we Live

Information technology has a much greater impact than industrial technology on the way people live, work, play and participate in society. New industrial technologies, such as the microwave oven, the food processor or power tools, allow people to accomplish tasks faster, with less effort. But, by and large, their use is optional – one can choose to spend more time and effort to achieve the same result. The lack of access to information arising from not using information technology is another matter. Information is key for making appropriate and timely decisions in all areas of life, saving time and money. In short, you can do the things you need to do better because of information.

About half of Canadian households use a computer (Figure 1) and the numbers have been rising steadily during the 1990s. As more and more computers are equipped with modems, users are connecting to the Internet. The General Social Survey (Statistics Canada, 2000) found that these changes have an impact on daily activities, communications, use of time and work experiences.

Figure 1. Households Equipped to use Internet - Canada, 1996-1999



(Source: Statistics Canada, Income Statistics Division)

Information Economy

According to the World Bank, "For countries in the vanguard of the world economy, the balance between knowledge and resources has shifted so far towards the former that knowledge has become perhaps the most important factor determining the standard of living" (World Development Report, 1998). Information and knowledge have value and are traded in two ways: either as information products or as products to which information has been added (smart products). Such knowledge-based goods and services are fueling knowledge-based production, commerce and trade that is being variously called the "new economy" or

the "information economy." In the information economy, productive activity requires people who are skilled in acquiring and using information and knowledge, that is, knowledge workers. Because of the high demand for these skills, knowledge workers are paid better than workers engaged in the "old economy." It is estimated that 60 per cent of jobs require computer skills and pay an average of 10-15 per cent more than jobs that do not require them (Oppenheimer, 1997).

Knowledge is the basis for ideas and innovations, and a knowledge-driven economy is one in which the generation and exploitation of knowledge has come to play the predominant part in the creation of wealth. Intangible assets such as specialized knowledge, networks and know-how are a source of added value and profitability for companies. About 70 per cent of the production cost of a new car can be attributed to elements that require knowledge skills, such as styling design and electronic programming. A modern luxury car includes more computing power than Apollo 11 (UK Government, 2000).

The marketplace of the information economy is also electronic. "E-commerce" is the conduct of business by means of information and communication technologies. It includes transactions involving automated banking machines, credit and debit cards, electronic data exchange and the Internet. According to Industry Canada, the world e-commerce market in 1999 amounted to CDN$195.39 billion but is expected to grow by 2004 to CDN$3.9 trillion. Canadian e-commerce in 1999 was estimated by Statistics Canada to be CDN$4.4 billion and by 2004 will achieve about 3.9% of the global e-commerce, or CDN$152.5 billion (Industry Canada, 2001). To take one example, the on-line grocery industry generated $25 million in 2000 in Canada and is expected to generate $300 million in 2003. E-commerce may not replace stores completely but where there are cost advantages, businesses using the Internet will thrive.

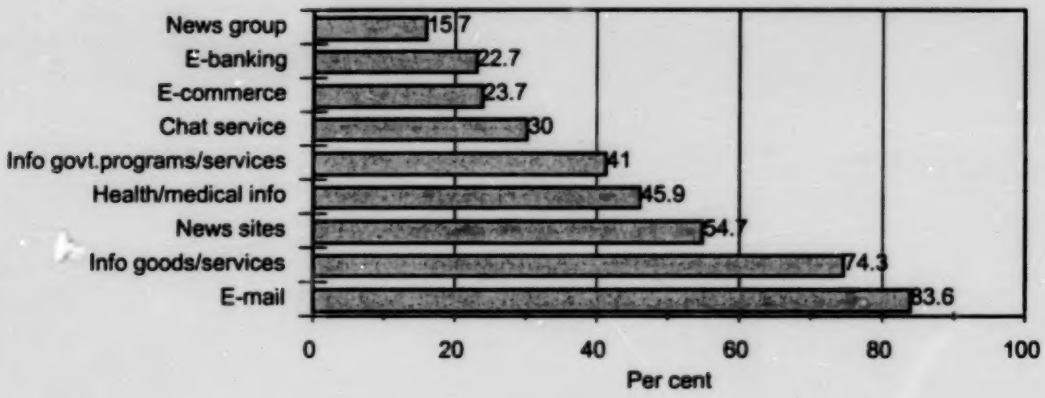
The costs of doing business fall dramatically with information technology. For example, the cost to process a simple transaction like a withdrawal or a cheque using a teller at a bank is $1.40 while the cost for the same transaction using an ATM is $0.45 (Dertouzes, 1997). Such business decisions have impacts for both shareholders and consumers.

Information Society

Because information technology is becoming more and closely linked to work, wealth creation, citizenship, and social relationships we now speak of an "information society". Access to such technology and its use will be associated with the consumption of goods and services, the standard of living and quality of life. These new ways of doing things constitute "e-life" and are fast becoming a normal pattern of life.

Once a novelty, the Internet is now transforming how people live, learn, earn and shop. In Canada, almost 13 million persons aged 15 and over use the Internet. About 61 percent of Canadians with Internet access at home use it for one to seven hours a week while 14 per cent use it for more than 14 hours a week (Dryburgh, 2001). The most popular use is for sending and receiving "e-mail" (Figure 2) and for "browsing" or "surfing" for information on goods and services. People also use it for finding information about news, health and medical information or government programs and services. Almost a quarter of the users engage in "e-banking" and e-commerce to buy goods and services.

Figure 2. What Is the Internet Used For?



(Source: General Social Survey, Statistics Canada, 2000)

This way of life is likely to be global. Currently 225 million people can send and receive e-mail in the world. Over a hundred countries are linked through the Internet and e-mail. By 2003, more than 500 million people will be using the web (Newsweek, 1999).

Impacts of the Information Economy and Information Society

The Digital Dividend

The benefits arising from the use of digital technology, over and above other technologies, is referred to as the "digital dividend." Consider the case of a visit to a medical specialist. The general practitioner who refers the patient has to first send the necessary records to the specialist. The specialist who conducts tests would have to send copies to other specialists to consult on the case. When the diagnosis is complete, the papers and the test results would be sent back to the general practitioner to go into the medical files of the patient. If an electronic system is used, all records will be entered once

into the medical record of the patient and under proper security measures, medical professionals can access the information directly, without mailing papers and records. Results will be available faster to the general practitioner and the patient. The efficiency gain would be the digital dividend.

The digital dividend may be economic or non-material in terms of time, effort, satisfaction, or social capital. Such dividends flow to the individual, to groups, networks and to society as a whole.

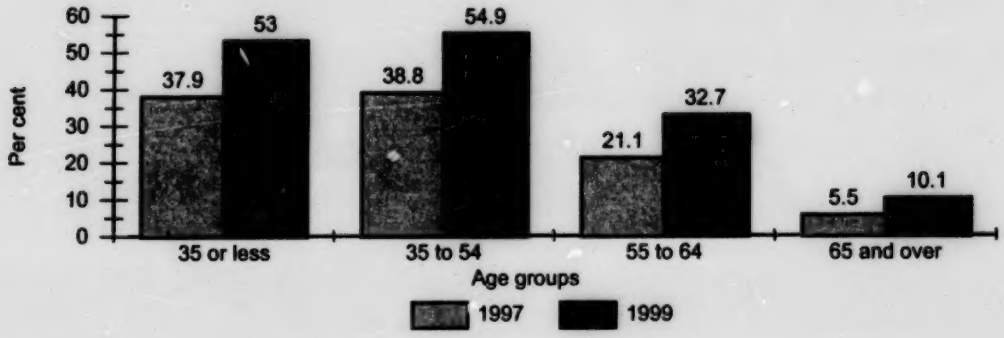
The Digital Divide

The term "digital divide" describes the gap between the people who are able to use and those who are unable to use digital technology for reasons of cost, lack of equipment or access. The digital divide may be linked to other problems such as the lack of education, remote location or lack of skill.

The digital divide is generally measured by the proportion of people using digital devices and by comparing groups or regions. By monitoring changes over time, it is possible to see if the digital divide is shrinking or increasing. There is some question whether data on the use of computers by Canadians provides reliable evidence on the digital divide. That is, it is not necessary to own a computer to benefit from the Internet. Still, it is recognized that access from work or a public facility is not as functional as home access, which allows the user to benefit at his or her own pace, 24 hours a day.

The use of the Internet from any location might be a better measure. It's use by Canadians of different age groups indicates that the digital divide is increasing in favour of the young (Figure 3). For example, the difference in the percentage of people aged 35 or less using the Internet and that of persons 65 years and over in 1997 was 31.4 but this number had increased in 1999 to 42.9.

Figure 3. Increasing Digital Divide - Internet by age, Canada, 1997-1999



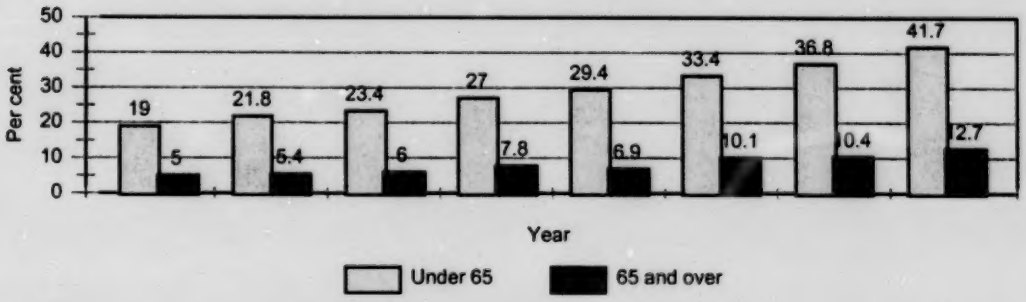
(Source: Statistics Canada, General Social Survey, 2000)

The digital divide is a relative measure. Those on the wrong side of the divide can fall there because they have less access to such technology compared to others or because they are adopting the technology at a slower rate than others. Both reasons may apply to seniors. There is evidence to show that seniors more than doubled their ownership of computers over seven years as those below age 65 did, but they were starting from a lower base, involving fewer people (Figure 4).

Older Canadians who do use the Internet may use it for longer periods of time to demand more services and better information. A study by Media Metrix of Canada, which issues monthly reports on Internet usage based on a sample 6500 Canadians, stated that those over the age of 55 were frequent users and that they spend a lot of time on the Internet, though their numbers were small. The study also showed that this age group had grown 41.6 per cent over the past year (Citizen, Nov. 24, 2000).

Ideally, the digital divide should be eliminated so that the benefits of the information society are equitably distributed. Proponents suggest that as computer use becomes as mainstream as televisions, the digital divide will disappear. In such a scenario, any disadvantage experienced by older Canadians would be short lived. Certainly, higher numbers of the baby boomers who will soon retire are technologically savvy.

Figure 4. Percentage of Households with Computers, 1990-1997, Canada



(Source: Statistics Canada, Catalogue no. 13-218-XPB)

In any case, at least those benefits arising from the use of smart industrial products would flow even to those seniors who do not use digital devices. However, the full value of the digital dividend will only be experienced by seniors when they are integral members of both the information society and the information economy.

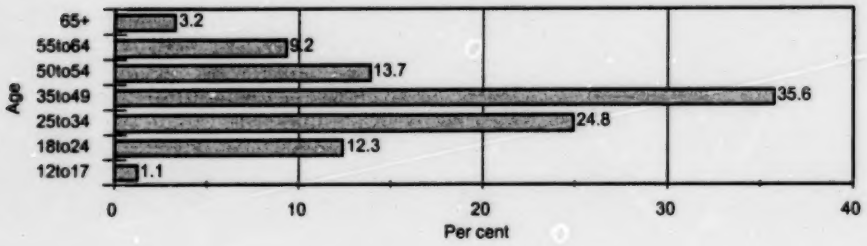
Reasons Why Seniors May Not Use Information Technologies

Internet users differ from non-users in average age, education and income. Non-users are more likely to be older, less educated and to have less household income than users. Non-users are more likely to be women than men in every age group. Francophones are less likely to use the Internet since the vast majority of information is provided in English. Those living in rural areas are also less likely to use it (Dryburgh, 2001).

New technology is generally embraced by the young; those of older ages may not be exposed to information technology and therefore may not adopt it. Seniors with low income and low education are even less likely than people in other age groups with these characteristics to use such technology. Data show that 28 per cent of respondents stated that cost was a barrier, and this percentage was as high as 42 per cent for those earning less than $20,000. Twenty-seven per cent said that they lacked access to a computer or the Internet; 18 per cent noted the lack of time and 13 per cent the lack of skills or training (Dryburgh, 2001).

The age effect is evident in the way information technology is used. For instance, older people use the Internet less than younger people for shopping (Figure 5).

FIGURE 5. Age of On-line Shoppers, Canada, 1999



(Source: The Globe and Mail, Sept. 16, 1999)

Many seniors are not aware of the difference between industrial technology and information technology and do not realize that the loss of benefits is quantitatively and qualitatively quite different. It is a complete misunderstanding to assume that one can do with a pencil what one can do with a computer just as one was once able to do with a washboard what one can do with a washing machine. The comparison cannot be made.

Additionally, if seniors do not own a computer and if they are less mobile, then access at locations outside their home may be a problem. Current patterns of usage show that more seniors use the Internet from home than other locations while at other ages, the Internet is used more heavily at home and work (or school, depending on age). However, use of the Internet by seniors from all locations doubled from five to ten per cent between 1997 and 1999 and is growing more rapidly than the rate for all households, though the percentage still remains small in comparison (Statistics Canada, 2000). Furthermore, the growing use of wireless digital telephones that have Internet capability can alter this situation. Seniors are familiar with telephones and less skill is required to use web-enabled digital telephones. At present in the United States, just eight per cent of the mobile telephones have web access (Kuchment, 2000) and the percentage is likely to be the same in Canada. It is estimated that there will be as many as 1.6 billion mobile phone users by 2005 (Kalb and Springen, 2000) and most will use such phones to access the Internet. Though the size of the screen may be a problem for seniors, magnification and scrolling can help.

Implications for Seniors

Seniors, who are mostly retired, may not contribute to information economy through paid work, but they certainly contribute through consumption. It is often suggested that

seniors are not consumers of big ticket items such as cars, appliances and furniture because they already own these products. However, seniors are major consumers of services, particularly health services, financial services and products for management of their assets.

Access to information makes older consumers more effective. Since the market is global, consumer choice is also global. The best and latest information is accessible to consumers, whether it is medical, investment or consumer information. The best professionals can be consulted without being limited to local expertise. The best goods for the lowest price can be ordered for home delivery from anywhere in the world. Recent information suggests that seniors shop on-line for bargain travel tickets. Consumers, however, have to be technologically literate and economically secure. If seniors do not have such information, they are not able to make the best use of the array of products and services and to purchase them at the best price.

Seniors who are on the disadvantaged side of the digital divide, may pay a price for their non-participation in the information society. They may lack access to up-to-date information that enables them to care for themselves and to relate to others. They may not be able to use the latest stock market information or benefit from savings due to e-banking. In fact, they may use services that cost more. Seniors, especially those that no longer drive or those that have problems with mobility, could benefit from tele-health and distance learning but will not be able to benefit from these options.

Traditionally, age has been associated with accumulated knowledge, know-how built from years of experience and a social network constructed through a lifetime of relationships. The younger generation has better technical skills, newer information and more knowledge in certain fields. They may be able to benefit from the experience of others though they may have little of their own. Their social network may be virtual and global, through e-mail and the Internet. This imbalance may affect inter-generational social roles, particularly those of the teacher, advisor and leader. It may no longer be unusual to have the young in leadership positions. However, social adaptations are likely: adoption of new digital devices and technical know-how may start with the young and spread to other ages.

Conclusion

The United States has had a policy of "universal service" for the telephone and has now extended it to digital devices and the Internet because of the importance of information for the economy and society. Under this policy, the government works with the private sector to ensure that every household has access to such a service. Such a policy ensures that equitable benefits from the information economy and information

society result from social choice, not chance. The free market is expanding the use of digital technology but some groups may not benefit without public policy intervention. Canada supports access to digital technology though it does not have a stated policy of universal access.

While there are some age group differences in the adoption of digital technology and through them, the access to information, there may be an acceptable pattern of relating to technology over individual lifetimes. Just as our consumption patterns change with age, so can our relationship to technology. Though the benefits at one stage of life may be different from those at other stages, it may be possible to have equitable benefits over the life course. Every life would have the same pattern of benefits which would peak when young and moderate in later years of life.

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TECHNOLOGY AND OLDER ADULTS: A SENIOR'S PERSPECTIVE

by

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September 2001
National Advisory Council on Aging

Introduction

The dictionary defines technology as "the application of science in industry or commerce." My focus will be on the use of technology by the senior population in personal life and commercial transactions, and to some degree, health. I plan to address the issue in a positive manner because some in the fifty-plus generation may perceive technology as a "threat" and this is a barrier which must be overcome. I prefer to describe it more as a "challenge" or an "opportunity."

The use of technology has both social and economic implications for *all* generations but it is probably the older population for which the implications are the greatest. Regrettably, many seniors did not have the same opportunity to receive the level of education as those in the younger age groups and a higher percentage of older adults must therefore deal with literacy problems. Financial resources are also a greater consideration for older adults, many of whom are on fixed or declining incomes. There are many seniors in lower income levels, particularly older single women. In addition, as a result of the greater mobility of our population and the necessity for younger people to leave their communities to seek greater employment opportunities, many seniors are left without traditional family support systems. These, and other factors, must all be considered with respect to seniors and technology.

The Telephone

The most commonly used everyday form of technology, by almost all seniors on a regular basis, is the telephone. Many recent innovations have been introduced with the telephone including: call display, call forwarding, telephone answering systems and voice mail. Most of these new services involve additional charges and this is a consideration particularly by those on limited incomes. Some of these new services are easy to use; others present some difficulties and require more training.

In addition to affordability and additional training, the decision to use these services depends on individual lifestyles. Certainly, they provide a number of benefits. Contrary to what many think, seniors often have quite busy schedules and having the ability to know who called and to return missed calls is important, as is the ability to screen incoming calls. Also, it is often very helpful to be able to leave messages with family, friends or businesses when they cannot be reached, particularly when there is an illness.

It is important to be able to select the options best suited to meet one's needs. All these services require extra equipment beyond the standard telephone and some, like call display, call forwarding and voice mail, involve additional recurring monthly charges.

Telephone answering machines are relatively inexpensive now and there are no recurring monthly charges. All are relatively easy to learn to use.

Voice Mail

Personal voice mail allows callers to record messages so that their call can be returned when the person they are trying to reach is available. Callers are spared the time and effort of telephoning repeatedly to reach someone. People receiving the telephone messages are assured that they are not missing important calls.

Business voice mail systems allow businesses to handle consumer calls quickly and efficiently with a minimum of staff time. When a person makes a call, an automatic recorded message is activated. The message provides a list of options from which the caller selects by pressing the corresponding key(s) on the keypad. Once this is done, the call is either answered personally or with a recorded message. Sometimes, the caller is advised to wait for someone to take the call or to leave a message. The caller can request to have his or her call returned. To use business voice mail systems, one must have a touch tone phone. If the caller is using a rotary dial phone, the caller either dials "0" or stays on the line for an operator to answer in person.

This application of technology is the one with which seniors appear to experience the most difficulty. Business voice mail systems vary considerably and more standardization of menus for voice mail would be very helpful to all, not just seniors. To improve client communications, the best business voice mail systems should also provide the opportunity for the caller to speak to a "live" person as well as to leave a phone number for a return call. Managers of businesses must ensure their staff members are properly trained in the use of voice mail. Staff members should be encouraged to accept phone calls as they are received unless there is a very good reason not to do so and they should be instructed to return calls promptly. Unfortunately, this is not always the case: clients complain that they have to wait for days for a call to be returned. In some cases, it may be necessary to insist that staff members be required to maintain logs of voice mail messages, including when calls are received and returned. Seniors experiencing difficulties should contact the managers of offending companies. Voice mail is supposed to help the consumer, not create barriers to communication.

Price Scanners

Most commercial enterprises now use computer technology, and for the most part, it serves customers very well. However, with the introduction of computers in retail outlets, particularly supermarkets, some concerns exist with the elimination of price stickers on

specific products. If the price of an item cannot be easily determined, seniors should ask for help. Some retail outlets now have scanners throughout their stores so that customers can scan the item for the price.

One of the disadvantages of the new system is that staff members responsible for keeping price files up to date do not always do a good job. This is particularly applicable to "sale" items. Customers must be vigilant to ensure they are charged the correct price. Generally these systems facilitate good inventory control, improve efficiency, ensure that the products customers want are in stock and control costs.

Bank Machines

Automatic tellers or ATMs, are convenient for withdrawing cash, making deposits and checking one's account because they are accessible in many places 24 hours a day, 7 days a week. Yet, many seniors are apprehensive about using this form of technology. Some training may be necessary so that family or friends could help, although most banks seem very willing to provide this service. It is very important to understand the conditions for using these machines. For seniors, as a rule, there are no charges for using a bank machine; however, it's worth checking with the bank to be sure and to determine whether this benefit applies to using machines from banks other than those with which one has account(s).

Certain improvements could be made to the use of bank machines; these include standardizing the procedures, enlarging the print, placing the bank machines in a secure, well-lit area. This is particularly important for use after normal banking hours. Often the customer must use his/her bank card to gain access after-hours. Some seniors are reluctant to enter these areas when there are other people present. One might feel more secure if a family member or a friend were to be present. Once one becomes comfortable with the use of this form of technology it will be learned that it has many advantages and provides great convenience.

Other Banking Systems

Direct deposit of funds is another widely used customer service provided by banks. Cheques are deposited in one's account without having to make a trip to the bank on cold winter days or if transportation is limited. Many seniors use this system for depositing their Old Age Security and Canada Pension Plan cheques as well as any other pension payments they receive. Authorized payment systems for regularly recurring bills, such as phone, power, insurance, rent and taxes, can be paid without leaving home. Again, this is a wonderful convenience for seniors and it can save time and money mailing payments to different addresses.

More recently, new services such as banking and filing income tax returns by telephone or computer have become available and offer the same convenience as one can do banking from the comfort of one's home. These services do require some training and an understanding of the applicable conditions. They are well worth investigating and offer the advantages of security and convenience. With the ever-increasing numbers of seniors using computers, computer banking has become a viable option.

Computer banking is similar to telephone banking. Special security measures are offered to protect the privacy of one's transactions. In addition to regular banking transactions, users of this technology are able to use their computers for managing their investments, obtaining loans and even arranging mortgages. Some concern has been expressed about creating a divide among seniors who use this form of technology and those who don't and we must be vigilant about this and do everything possible to deal with it.

Other Uses of Computers by Seniors

The *Journal of the American Medical Association* states in its March 28, 2001 issue that: "the number of older adults using the Internet is expected to swell from 14 million in 2000 to 27 million by 2003." Retailers of computers also report that there has been a substantial increase in the number of purchasers in the 55-plus age group. While this form of technology is not embraced by all seniors, it is clear that assistance and training should be provided for those who do, as well as access to those who are not able to own a computer. The Community Access Program (CAP) offered through the cooperation of the Federal and Provincial Governments has made computers available to the public at no charge in many urban and rural locations in each province. Nova Scotia alone has more than 200 CAP sites. As part of the program, training is offered by volunteers, many of whom are seniors, at very reasonable rates. Most seniors want to learn how to send and receive e-mail and to be able to look up information on the World Wide Web.

For seniors' organizations the computer offers a fast, convenient and inexpensive means of interacting with other organizations as well as with their own members. They are helpful in the preparation of their newsletters, notices, posters, minutes and other member services.

As seniors become comfortable with the use of computers, like all other generations, they want to advance further. Computers then become a major source of information for them. Principal areas of interest include travel, genealogy, news and health information. The *Journal of the American Medical Association* reports that more and more seniors are relying on the computer to obtain health information. This has

resulted in the need to provide information on the most reliable sources of this type of information. In Canada, the Canadian Health Network is recommended as one of the most reliable sites (www.canadian-health-network.ca).

Drug care is one area of health care where computers have provided many benefits to seniors. For the past twenty years, pharmacies have used computers to keep up-to-date records of an individual's medication usage. This form of technology has enabled pharmacists to provide much better care to clients, for instance, by enhancing their ability to detect drug interactions, alert patients about allergies, provide printed drug information and monitor compliance. In addition, they provide receipts and bill drug plans.

Computers are valuable for seniors as well because they allow them to access educational material at home, whether it is formal education such as an "on-line course" or information to improve everyday well being. They are particularly valuable to those with a disability or for whom transportation is a problem. Improvements continue to be made in this form of technology so that persons with a visual or other disability can access information.

Computers, television, video and audio cassette recorders have made significant contributions in seniors' lives in areas such as health care and education. These forms of technology bring the advantage of convenience and they also provide home entertainment. For those with a visual disability, audio tapes give back the power to enjoy books they can no longer read. For those with a hearing disability, the advances in devices to restore hearing and the adaptation of telephones has been remarkable.

Conclusion

Virtually all aspects of our lives are affected by some form of technology. Technology must not be perceived as a threat; it must be viewed as an opportunity, despite its many challenges. To provide the best advantages, it must be managed well. With patience and some practice and sometimes the help of others, seniors can use these technologies for their benefit. It is important that the challenges associated with the many advancements in technology be addressed and that the business community in particular listen to and respond to the concerns expressed by seniors and others.

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INCREASING THE PACE OF INNOVATION TO MEET PRODUCT AND SERVICE NEEDS OF OLDER CONSUMERS

by

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The Place of Older People in the Consumer Market

Historically, older people have been the richest people in almost every society around the globe (Covey, 1991). They were and are the owners of most businesses, land and homes. They have had a lifetime to accumulate wealth in the form of savings and possessions. Younger generations generally aspire to meet or surpass the average net worth of their parents. Given the fact that older consumers have always had more wealth than younger, one would think that business communities around the world would have always thought about developing and marketing new technologies that meet the needs of older consumers. This is most assuredly not the case.

Until about 15 years ago, businesses were literally blind to older consumers, ignoring their needs and desires (Robertson, 1984). There are many explanations for their blindness, most of which fall under the following five categories. First, businesses were aware that older consumers were, in fact, relatively few in number. Life expectancy has only recently risen to its current all time high, thus helping to increase the sheer number of older consumers in the market place. Second, most businesses operated under the belief that older people had no consumer needs. This belief was based on the premise that older consumers had already purchased all that they needed at earlier stages in life and were fully equipped for the remainder of their lives. If they were not living independently then it was assumed they were living with family members or in long-term care facilities that provided for their every need. A third explanation for the blindness of businesses was their firm belief that the majority of older people were living in poverty, with little or no money available to actively participate in the consumer market place. This was not far from the truth. The poverty rate among older consumers was exceptionally high and has only recently decreased. A fourth explanation lies in businesses' belief that even older consumers who had money to spend were hoarding it for later spending on health care. Finally, businesses also believed that it would be a publicity fiasco to mix their company's image with the image of an older consumer. The marketing rule was to avoid the image of old age as it was associated with death and dying. Marketing departments were obsessed with the idea that publicity must present images of skinny, beautiful, young bodies and faces in order to sell their technological innovations.

Unfortunately, most businesses continue to ignore the economic place of retirees in today's consumer market. They continue to believe that older consumers have already purchased everything they need and are saving their money for future spending on health care. Businesses are also aware that the poverty rate among older consumers continues to be quite high, second only to the poverty rate among children. It is true that older consumers know the value of "a penny saved." This reduces the temptation to spend unnecessarily for new technological products and services that were, in fact, developed and marketed for younger consumers.

Beginning in the 1980s, however, businesses began to recognize three things about older consumers. First, it became impossible to ignore demographics. Consumers, like the population, were aging! Retirees had become the fastest growing segment in the consumer market for goods and services. Second, it was increasingly obvious that the current generation of retirees are not as poor as previous generations (Zimmer and Chappell, 1993). Most current retirees have access to pension income from not one, but three sources: public, employer and personal retirement savings plans. The current generation of retirees has also accumulated more wealth than their parents due to higher lifetime wage earnings and many benefited from life in two-income households. Older consumers have more discretionary dollars to spend in the market place than younger consumers since they have few consumer debts (mortgages, loans or credit) and few work- or child-related expenses. Finally, in the mid-1980s, businesses were also influenced by a general societal-level attitude shift toward aging. Populations around the world began promoting a new, more positive image of aging.

A Tidal Wave of Business and Consumer Change

Marketing researchers have identified two forces operating sequentially that sounded alarm bells in the business community. The first alarm bells began ringing in the 1980s when businesses became conscious of the cumulative effect of population aging on the demand and supply of goods and services. The baby boom generation was acting like a societal tidal wave in the market place (Wilkie, 1986). It began in the 1950s as the market place was facing the baby boom that followed the end of World War II. Businesses and industries suddenly had to gear up for babies! They dramatically increased the supply of technological goods and services appropriate to the demands of families with babies and

toddlers. It was very hard to meet the demand for the latest innovations in baby furniture, baby clothes, baby diapers, baby bottles, baby food, single-family homes with fenced back yards, toys and cameras. Hospitals needed to update and enlarge their maternity wards; and they needed more pediatric doctors and nurses to tend to the needs of pregnant women, newborn babies and toddlers.

In the 1960s, however, the market place was rapidly changing. The baby boom ended and the boomers were no longer babies! Baby products and services were on the out; innovative school-related products and services were in hot demand and short supply. Teachers, school buildings, buses, calculators, electric typewriters, bicycles, and municipal playgrounds and sport facilities were needed and the market place again had trouble gearing up. By the time technological innovations were in place to meet demand, it was too late. The baby boomers were aging and on the move.

In the mid-'70s and '80s, baby boomers were teenagers and fast approaching young adulthood. They now wanted/needed cars, universities, apartments, furniture, music, soft drinks, fast food, makeup and movies. Because there were so many young adults with energy and ingenuity to spare, more police were needed to cope with the higher crime rate of the period. All too soon the baby boomers needed their own single-family homes in which to raise the echo generation (i.e., the babies of the baby boomers) (Foot, 1999).

Time marches on and at the end of the 1990s, the baby boomers were middle aged and aging. They were thinking/worrying about their youthful looks and their potential retirement incomes. Technological advances were used to create new health foods, health aids, skin care products and other modern luxuries. Boomers were demanding financial planning and investment services to help them plan appropriately for their own retirements, which are looming on the horizon. Unfortunately, businesses again limited their focus to baby boom consumers who were in their forties and fifties, rather than taking a universal design perspective that would have appealed to all consumers, including those who were 65 and over.

The baby boom tidal wave provoked the very rapid birth, then death, of many businesses who failed to think about and plan for the aging of their consumer market (Mowen, 1987). The aging of the population took most businesses totally by surprise. For

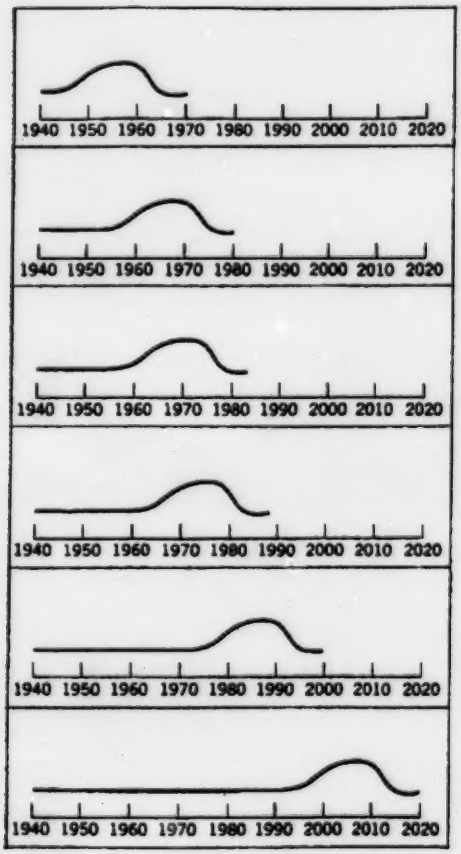
example, in the 1950s and 1960s, the dairy industry geared up to produce an unprecedented quantity of liquid milk for young boomers who needed milk for strong teeth and bones. By the 1980s, baby boomers were no longer drinking milk. Coca-cola and beer had won their palates. The glut of liquid milk in the dairy industry forced them to use new technologies to transform their product, thus the birth and aggressive marketing of yogurts, premium ice creams and cheeses. In another example, the Levi-Strauss jeans company experienced enormous growth during the 1960s and 1970s when the baby boomers were teenaged "hippies." When the "hippies" entered the labour market in the 1980s, they could not wear their jeans in the workplace. Levi's profits plummeted and they were forced to close many manufacturing plants. Businesses were becoming aware of the aging of their customers; they began waking up to the need to use technological innovations to "age" their products and services in order to keep their customers.

A second force was also working hard to wake businesses up to aging consumers. This force took the form of a fledgling consumer movement spearheaded by the American Association of Retired People (AARP). According to gerontology marketing researchers in Canada, Great Britain, the United States and France, AARP was (and is) the champion of consumer lobbying on behalf of retirees (Foot, 1999; Gunnert, 1998; Moschis, 1994; Trèguer, 1994). Their powerful impact on the business community resulted from their impressive membership statistics. They started taking the message from their membership to the business community by demanding technological innovations in products and services for retirees. They helped teach businesses that not all retirees were poor and that retirees had specific needs for more appropriate products and services. They also began a program to teach businesses how to market to retirees. They developed an extensive and rigorous list of rules that businesses had to follow if they wished to place advertisements in their hugely successful *Modern Maturity* magazine. They also demanded that the advertising industry improve the image of aging portrayed in their publicity campaigns.

It is safe to say that industries are now looking more seriously at the over 50 market. However, looking does not always translate into action. Zimmer and Chappell (1993) found that most innovative products and services for older consumers were being created and marketed specifically for the oldest old. Examples of newer products on the market include incontinence pads, ergonomic kitchen utensils for arthritic hands and numerous bathroom aids that in theory help prevent falls. This focus reflects businesses continued

stereotype that aging is synonymous with physical frailty. It may also reflect the preoccupation of baby boomers who are attempting to help their aging parents remain as autonomous as possible.

Figure 6. The Baby Boom Tidal Wave Moves Through the Market Place



Examples from three industries will be used to illustrate how businesses are failing to meet the demand and specificity for technological advances in products and services for retired consumers: the leisure/travel industry, the automobile/transportation industry and the food industry.

Travel /Leisure Industry Failings

Many older consumers are active travellers. Let us turn our attention to the hotels in which retirees must stay while travelling (Wuest et al., 1998). Do the majority of hotels have appropriate lighting for weary travellers' eyes? Are their public areas, such as lobbies, hallways and restaurants, designed with older consumers in mind? Are the signs highly visible? Are they easily legible from a distance? When older travellers arrive at their door, are the door handles levered for ease of use or are they the old style knobs, which are more difficult to open? Does the room have appropriate floor night lighting that guides one safely from an unfamiliar bed to an unfamiliar bathroom in the night? Are there appropriate support bars in the tub or shower should one slip while reaching for the shampoo forgotten by the sink? If one stops to think logically about these small technological details, which were in theory designed with older consumers in mind, one quickly recognizes that these modifications would benefit all consumers, regardless of shape, size, age or physical capacity.

Automobile/Transportation Industry Failings

Travelling to and from most leisure activities, older and younger consumers often drive or take a bus, train or airplane. Are these transportation industries meeting the needs of older consumers? Briefly consider the automobile (Lefrançois and D'Amours, 1997; MacDonald, 1989). Are the size and placement of all dashboard equipment appropriate for older consumers? Are they legible, reachable, easy to manipulate? Is the size of the turn signal indicator large enough to be easily seen when the light is flashing on and off? Is the noise that it emits loud enough to be easily heard? If the automobile industry focused their technological know-how on upgrading these features to meet the needs of older consumers, consumers of all ages would benefit. Studies show that even young drivers are implicated in fatal collisions while attempting to adjust air ventilation, temperature controls, radio stations or volume, etc. If these knobs were more accessible, legible and easily manipulated, the roads would be safer for all.

Most people are not aware that highway systems around the world were conceived, designed and built for "average" drivers. Of course, "average" was defined as being between 25 and 35 years of age. The size and colour of the lettering and its background,

as well as the distance required between road signs and exits, were determined based on the visual acuity and reaction time of young drivers (Lefrançois and D'Amours, 1997). The timers controlling crosswalks allow an able-bodied 25 to 35 year old to cross the street with time to spare. Is that time adequate for older consumers? It is certainly too short for mothers of young children as they rush across the street before the light changes. Some public transportation departments are only now discussing the need for what are called "refuge islands" in the middle of four-lane streets, so that pedestrians can safely wait in the middle of the road on an island of safety until the next short crosswalk cycle begins.

Food Industry Failings

Marketers point to dismal failings in the initial conception and marketing of such products as incontinence pads and puréed vegetables for adults. Procter and Gamble soon discovered they could not market their product "Attends" using the term *diapers*. Heinz soon found that only a tiny fraction of older consumers needed puréed foods and that those that did preferred purchasing baby food under the pretext of feeding visiting grandchildren!

Grocery stores should be thinking more about the service needs of their older consumers (Alberta Council on Aging, 1999). Older consumers would very often appreciate some help getting groceries to their car or even delivered to their homes. These services would also be appreciated by time-pressed younger families. Web-based shopping with home delivery could eventually become a viable option for older consumers in many urban communities, if computer programmers develop such web sites with older consumers in mind. A snow-bound woman with arthritis may someday be able to sit in front of a virtual grocery store, surfing from aisle to aisle, from product to product, selecting what she wants. Her virtual grocery list would be printed off at the store; an employee would collect all the items and proceed from the check-out lane to the store's home-delivery vehicle. Once at the door, the woman would pay, then put her groceries away. Perhaps new technologies could help to design local community meal sites with adequate transportation systems and improve in-home meal programs (e.g., Meals-on-Wheels).

How to Increase the Pace of Change

It is evident that businesses and industries are reacting slowly and sporadically to the needs and desires of older consumers. This paper has highlighted a limited sampling of some failings in the travel, transportation and food industries. There are also numerous failings in the educational market, the housing market, the home furnishings market, the pharmaceutical market and the health care market, to name just a few. In most cases, simple modifications of existing products and services would be greatly appreciated. In other cases, businesses need to design, develop and market entirely new products and services in order to meet needs that have thus far been ignored. It is important to remember that the modifications and new developments will likely benefit *all* consumers, not just retirees. The need and demand for appropriate products and services is obviously greater than industry response.

Industries would be well advised to listen more closely to the "Mature Market." They should consider hiring retirees as product and service consultants. Industries should conduct more focus group research among retirees. Focus group research would allow retirees to express their opinions and needs directly to businesses. Most businesses, however, appear to be hearing impaired when it comes to listening attentively to the voices of their older consumers. The current generation of older consumers should not wait until the baby boomer tidal wave forces businesses and industries into action. By then, it will be too late. To have their voices heard, they need to become more vocal, filing complaints, making demands, teaching businesses that they are wrong to ignore them. The need for older consumer action is now.

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OLDER ADULTS' USE OF TECHNOLOGY TO MAINTAIN READING AFTER VISION LOSS

by

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Impact of Visual Loss on Reading

Age-related eye diseases (especially macular degeneration, glaucoma, diabetic retinopathy, and cataracts) threaten older adults' ability to continue reading for leisure and for everyday activities. One of the most prevalent disabilities affecting the general population, vision loss, afflicts individuals primarily over sixty-five years of age (Branch et al., 1989; Lubinski and Higginbotham, 1997). More than one in nine Canadians over age 65, and more than one in four over age 80 experience severe vision loss (Canadian National Institute for the Blind, 1998).

Through interviews with 40 older adults with visual impairments, we have learned about their use of both low-tech and high-tech devices to deal with written materials (e.g. see Ryan et al., 2001).

Reading for Leisure and Productivity

Some older adults felt that they should "gracefully give up" reading of various kinds (books first, then newspaper articles, then headlines) as they progressively lost vision due to one of the above diseases. Others were strategic in working out ways of continuing to "read" (i.e., deal with written materials effectively). Reading was just as important to older adults after vision loss as it was before. Except for newspapers and magazines, the types of reading materials were similar. The reasons for reading both before and after vision loss were mainly to learn and for enjoyment (see Gold, 1990). Thirty years after losing his vision, an 88-year-old interviewee still claimed reading as his favourite activity. He accomplished this with talking books and an advanced computer system. Another interviewee experienced significant vision loss while completing his undergraduate degree in his sixties and persisted through graduate studies without the use of a computer.

Reading for Everyday Activities

Reading is important for quality of life, not only for productive and leisure activities, but also for everyday living. The people we interviewed had to deal with print-related barriers for each of the instrumental activities of daily living – meal preparation, shopping, travel, telephone, finances, household, and medications (Lawton and Brody, 1969). The

main reading requirements in these activities were for print, dials and currency. Successful shopping and travel may be accomplished through establishing a routine, using magnifiers or large print lists, and asking staff and other customers for specific assistance. For some individuals, the white cane served as a welcome signal, making it easier to ask for help with signs, labels, and other information. For others, the stigma of the white cane outweighed its potential usefulness. In other domains, a person can use enlarged or tactile marked dials; large print address books, recipes, or cheques; operator-assisted dialing; telephone banking; or computer software for managing appointments, information and finances.

Assistive Technologies Related to Reading

A variety of devices are available to help older adults with vision problems so that they may continue their reading (Beaver and Mann, 1995; Mann et al., 1997). Most individuals with low vision use magnifiers for written materials until their vision is no longer adequate (Stone et al., 1997). Magnifiers are easily portable, relatively inexpensive, and useful for many everyday activities such as meal preparation and shopping. On the other hand, further vision losses may require frequent changes in low vision magnifiers. As well, people have to use organizational strategies to keep track of their magnifiers (e.g., consistently returning one's magnifier to its place). Due to the physical demands of using a magnifier for a long period of time, it may not be a total solution to an individual's reading dilemma.

Talking books (books recorded on audiotape by volunteer or professional readers) allow the individual the experience of reading lengthy materials comfortably. An impressive variety of classic and recent books are readily available to visually impaired Canadians through the services of the Canadian National Institute for the Blind (CNIB) and the public library system. In addition, users are able to engage in other activities while listening. However, listeners need to acquire new attentional skills in order to use talking books; and the coexistence of hearing problems poses another age-related barrier for some older adults. As well, choosing what to read spontaneously is less possible in that books need to be ordered ahead of time from a prescribed list.

The fixed, uni-directional structure of audiotapes is most suitable for books presenting a single narrative (e.g., fiction, biography, or history). It is less adequate for the

presentation of informational materials which are usually skimmed in a highly individualized way (e.g., newspapers). Current developments in digital technology are paving the way for more flexible production of audio books. In particular, compact discs offer the possibility of selective access, rather than linear access to the material.

The closed-circuit television (CCTV) enables the user to magnify any document and view the enlargement on a television screen. The device is flexible in that degree of enlargement can be changed for different purposes or users; documents of any size can be read with it; and handwriting and pictures are as readily enlarged as printed material. However, the device lacks portability and may make some users dizzy because of the shifting image as the material is scanned.

Of course, computer technology offers the flexibility of multipurpose equipment which can be adapted for a user's changing needs as well as for multiple users. For users with visual disabilities, large monitors and software allow for large print on the screen along with magnification features, while scanners and software enable a computerized voice to read aloud from printed materials. Screen-reader software is available to say aloud all information visually presented on the screen. Dictation software permits the individual to use the computer by verbal commands rather than by the keyboard and mouse. Database software enables the user to keep track of useful information (e.g., address book, recipes, finances, genealogy, and hobbies) in a readily accessible manner. Using e-mail and the Internet with appropriate accommodations (large print, text-to-speech, voice-to-print) facilitates correspondence with family and friends and access to supplemental sources of information about current events, health and hobbies. Through VISUNET Canada, the CNIB offers Canadians who are visually impaired specialized internet services which allow them to browse the national catalogue of talking books on-line, download talking books to play on their own computer, and "read" daily newspapers.

Furthermore, the computer can also be helpful in preparing materials for individuals who do not actually use the computer themselves. For example, documents can be prepared in large print (with great flexibility of size and font) for general reading or for specific purposes, such as incoming mail, recipes, address book, and personal calendar.

As noted throughout this volume, there are a number of impediments hindering the full use of the increasingly valuable computer technology. New learners have to acquire a

whole new language, involving many specialized terms (e.g., byte, word processing), new meanings for many ordinary words (e.g., mouse, scan, connect, document), and intimidating phrases (e.g., illegal operation, fatal error). The use of computers is complicated by the vast number of details necessary to learn and remember, the constant changes in software and hardware, and the unpredictability of any computer system.

Older adults often begin to use a computer as an assistive device for their visual disability without any previous computer experience. They make use of the available software and hardware with training provided through the CNIB and other social agencies. However, changes are still required to make the computer systems more user friendly and to provide more intensive and ongoing training. Since the computer systems required for text-to-speech and voice-to-print are especially complex and unpredictable, it is understandable that some are reluctant to become reliant on such technology. Ongoing social and technical support can help ensure success in the transition to computer-assisted reading and writing.

Social Issues Regarding Visual Impairment and Technology

Older adults with visual impairment can make effective use of technology to deal with written materials. Ongoing and future advances in technology should make computer use easier and less expensive. However, there are several societal barriers that need to be addressed.

First of all, older adults who have visual disabilities also have limited access to information about assistive devices for reading. Professionals serving older adults are frequently unaware of the importance of reading for the quality of their clients' lives, in terms of leisure, everyday activities, and productivity. As a consequence, they typically have little knowledge about assistive devices. Ophthalmologists tend to focus on the medical aspects of their clients' eye disease exclusively rather than providing counseling or even referrals regarding how to cope with loss of vision. The resources of the CNIB are available to older Canadians losing their vision, but there is a widespread misperception that the CNIB serves only the totally blind. Older people experiencing vision problems qualify for financial support for assistive devices in some provinces of Canada although it should be a priority in every province. Better education about the prevalence and impact of low vision among older adults and available assistive devices and services should be

offered both within university and continuing education programs. A special focus of this education should be on hard-to-reach seniors whose social isolation may preclude their learning about devices and services. The typical reliance on small-print brochures, for example, is not effective with low vision seniors unless their family or friends pass on the information.

Social barriers also limit use of assistive devices. Given the existence of both positive and negative stereotypes of old age, older adults are reluctant to link themselves with the frail/impaired negative stereotypes by using assistive devices. Moreover, as older adults are not expected to be productive, social expectations for old age often support the gracious relinquishing of activities rather than accommodations to maintain them. Feelings of embarrassment and denial can also lead to complacency. Finally, the stereotype that people of a certain age are too old to learn new technologies is pervasive among all age groups.

In addition, there are a number of communication barriers with regard to computer use. Technical and social "helpers" may underestimate the older learner's ability and "overhelp" by fixing a computer problem without teaching how to fix or avoid the problem in the future. They may be reluctant to discuss computer operation in a conceptual way before getting into details and may use too much computer jargon. This tendency to underestimate the capacity of the older user and not try hard enough to communicate seriously about computer issues is even more likely when the person is also visually impaired. Given the stereotypes about less productivity among older adults and among disabled persons, helpers may not show appropriate respect for the need for independence of older individuals with visual loss.

Final Comments

Unlike a white cane, computer technology offers the benefits of universal design, which does not stigmatize the user. Moreover, older adults with visual impairments have been among the first in their age group to take advantage of front-line advances since the obvious advantages for reading and writing activities and the available financial support can override the generation gap aspects of the "digital divide".

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COUNTRY ROADS:
CONNECTING OLDER RURAL CANADIANS

by

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Introduction

As I sat by the window in the restaurant in a small rural Saskatchewan town eating my lunch, I thought about the conversation and camaraderie around me, the country road I had just travelled on, and the train whistle I could hear in the distance. Coffee shop conversations, country roads, railroads – they have all played an important part in the overall development of rural life. I wondered, though, how rural Canada is reacting to the changing times. As Luke (1998) and others note, the changes we are experiencing are not trivial.

New developments in telecommunications and computer technology are in the process of changing the world in as profound and far-reaching ways as the Agricultural Revolution and Industrial Revolution several centuries ago. Now we have the latest phase of the "Information Revolution," the computerization of society through computer-controlled everyday technologies such as cars, telephones, elevators, stoves, washers, TVs, VCRs, ABMs, and PCs. Such technologies are transforming the way we relate to our world and to each other.

The information revolution is probably the most important force shaping communities today – including rural communities. New style country roads are under construction as the information highway extends into many rural centres. Chat rooms are becoming an alternative to coffee shops.

However, there is a disparity between urban and rural older adults. Change is taking place rapidly for urban Canada and there is little doubt that ongoing access to new technologies will be made available on a rapid basis. For metropolitan Canada the question will be the number of providers seeking to serve customers rather than whether services will be provided at all. For rural and remote Canadians, including older adults, the future is more uncertain.

As we move forward in the twenty-first century, will rural people, especially older rural Canadians, drive the information highway with all its services to the same extent they now drive country roads? Or will they be left in the dust? And where will the country conversations take place?

Creating Connections

Although the number of Canadians who have access to computers, the Internet and various everyday technologies has increased, the "digital divide" between information and communication "haves" and "have-nots" is still growing. This is especially true for rural older adults in comparison to their urban peers. Service to rural and remote areas of Canada comparable to the abundance of opportunities for learning, enrichment, services and involvement in urban areas is a matter of growing concern. Rural and remote communities simply do not have the same access to the digital world as do most other Canadians.

For rural seniors, access remains the key issue. The lack of broadband infrastructure and community resources has meant that many communities and the individuals living in them are without the opportunities to benefit from information highway access.

Closing the digital divide in rural Canada is no easy feat. Cost is a prohibitive factor, especially in sparsely populated areas. Having access and using many everyday technologies taken for granted in urban centres is problematic, if not impossible, in many rural communities. Nevertheless, rural economic planning for the information highway has to take place in some fashion as it did earlier for the building of road and rail systems.

Although the federal and provincial governments have a goal of connecting all citizens and have initiated several programs to accomplish this, they need to become more proactive in accommodating the needs of an older population. Governments at all levels, and aging service providers need to be encouraged to hasten their application of everyday technologies for the benefit of the senior community.

Equity challenges of age, race, geography, income and education will need to be faced creatively and with cultural sensitivity. People who wish to preserve their language and culture want to ensure that the technologies will respond to their cultural needs. Presently, the opportunities to use everyday technologies among various groups of older Canadians are unequal and uneven. We need to find ways to allow Canadians regardless of age, race, or ethnicity, including people with disabilities and those with special needs, to access the same everyday technologies.

One of the first steps in creating new rural connections will be to work with seniors in their communities to help them understand the importance, value, and procedures of modern technologies. As Stahl (1999) argues, "we have to aim for a technology practice that includes everyone..." To do this, he writes, we can begin with an invitation for people to talk.

At the Seniors' Education Centre, we invited older adults to come and talk and participate in a series of workshops during the year 2000 in rural Saskatchewan as part of the pilot project, *"Everyday Technologies and Older Adults: Friends or Foes?"* coordinated by the Nova Scotia Centre on Aging, Mount Saint Vincent University.

We initially held a series of focus groups with Aboriginal and non-Aboriginal older adults in selected rural communities. The workshop design that followed was based upon focus group participants' identified needs to learn specific technologies. Attitudes towards everyday technologies in the focus groups and workshops varied from those who wanted to be connected but faced major barriers such as cost and various levels of confidence with the technology; and others who saw no need to use everyday technologies such as bank machines and automated telephone services. Reddick (2000) describes this as a "dual digital divide." However, with the help of local community hosts, credit unions, and SaskTel, the workshops sought to build upon what people already knew, develop self-confidence in using everyday technologies and share information about the value of these technologies in a manner that was engaging, participatory, and encouraging.

The information revolution has special potential for either isolating and leaving rural older adults – aboriginal and non-Aboriginal – even further behind urban seniors or meeting the challenges related to growing old and enhancing their quality of life.

It is important to encourage rural Canadians to be connected to new information and communication tools that are now becoming an increasingly essential part of the twenty-first century. Raising the level of digital inclusion among rural older citizens is vitally important to their overall well-being.

Spotting the Signposts

Sometimes we don't notice the signposts as we travel along a highway or country road. As we travel the information highway, it is critical that we spot the signposts.

I am a user of technology. I value what technology can help us accomplish. But I worry about the ethical implications and social impact of the new technologies on all of us.

Ethical questions can involve such issues as the right of rural older adults not to be excluded – the right to enjoy the benefits of the new technologies – and the basic goal of enhancing one's quality of life.

A study of the social impact of everyday technologies on rural elderly people would need to include an examination of the effect of technology on various areas such as health care (reduced costs, improved care); work and retirement; communication and social interaction; technology and disabilities; life-style; home safety and security devices; and economic issues (ABMs, automated telephone services).

It is beyond the scope of this paper to look at all the possible ethical and social concerns with everyday technologies. However, I think some key questions have to be considered. Do the new computerized technologies increase the independence and control older adults have over their own lives? Do they increase the options of seniors and provide them the opportunity to utilize multiple resources? Do they free older adults from restrictions of physical impairments, distances, travel (especially at night)? Do they aid communication?

In reflecting on these questions, there are two signposts that I think we need to pay more attention to as we travel along the information highway in rural Canada. The first signpost reads, "A New Vision of Aging."

In our wired world, a new vision of aging is needed. Our current maps of aging are often flat, leaving us "with no peaks of inspiration, no depths of soul…" (Hillman, 2000, p. xxi) Travelling on the information highway requires new maps of aging.

Ageism and its clichés, for example, are a pervasive form of discrimination in western society and this impacts on the development of policy and provision of services to seniors. Part of the problem with ageism is that it is still not generally acknowledged as an insidious and deep-rooted discrimination akin to sexism and racism. A new vision would see the aging demographic as an opportunity in terms of ongoing community vitality (social, economic) rather than an unsatiable burden.

The focus of policy makers is often the economic development aspects of information technology in rural areas. Room has to be found for aging issues in these discussions. This is critical because in rural communities older citizens are a particularly important part of the economy and aging services are vital economic forces.

It is important for rural planners to see the value of the range of services that could help maintain seniors in their rural communities and meet their legitimate needs – e.g., developing new circles of friends, keeping their independence as long as possible, enjoying financial services. Older adults also need to see more of the transforming effects of access to advanced everyday technology services.

A new vision of aging would seek to empower older adults. Empowerment means "reframing old notions of 'power over' to embrace 'power to' and 'power with' approaches" (Cusack, 1999).

The lingering effects of 'power over' was shared by a 70-year old First Nations elder at one of our rural workshops (Burkhart, 2000). She indicated that most of the older adults on the reserve were raised in residential schools, and were used to being "held back." Therefore they are not actively involved in the community and are hesitant to attend workshops such as the one we sponsored on everyday technologies. She encouraged other workshops be held to assist Aboriginal older adults.

Empowerment leads to individual and collective action that benefits the whole community. This includes enabling seniors to enhance their social and economic well-being and to participate more actively in society, including the Information Highway. It means giving them the recognition, support and encouragement they need to be successful in the 21st century.

Our experience at the Seniors' Education Centre has shown us time and again that when our older adult education programs are carried out with, by and for older learners and when our applied research involves older adults in a participatory way, it becomes a liberating, empowering experience for all involved. One older adult described her lifelong learning experience at the Centre as opening "a whole new world." It's "learning for the love of it," commented another.

The second signpost to spot on the information highway directs us to a deeper view of "access." Jeremy Rifkin (2000) calls the notion of access "the most powerful metaphor of the coming age." He argues that the word "access" has this impact because it creates an image of new worlds of possibilities and opportunities.

What I find intriguing about the approach Rifkin takes is that he adds a new dimension to the discussion around access and technology. He enlarges the usual view of access as being "access to" technology – affordability of hardware and software, the availability of service, computer literacy, privacy – and "access in" technology – connections, password, pin number, fire walls – to include another dimension.

The other access aspect that Rifkin focuses on is "access through." It is through these influential new forms of electronic communication that we gain access to the feelings, values, shared experiences, and meanings that are so important and that we cherish and nurture as human beings. It is such experiences that lead to a life of deep communion and personal transformation and go to the very heart of the kind of rural communities we are creating for and with older Canadians. In other words, it is not enough to wire the world if we short-circuit our souls.

Older people are often considered to be the elders, the conservators of traditional values and wisdom-keepers of a society. But as elders and sages, they can also be "new pioneers" (Carlsen, 1991) along the information highway in rural Canada. Given the unprecedented rate of change around the world, the elder as "conservator of old values must also become the elder as pathfinder to the future" (Schachter-Shalomi, 1995) by testing new technologies, ideas, and styles of living.

Such rural elders will contribute with wisdom and skill to an information age with all its technological advances and services that may indeed be instrumental in developing

technology applications beneficial to themselves, to other age groups, and to rural communities in other countries.

Different Country Roads

We are travelling on different country roads into a new period of human experience. The information and communication technologies we are creating as part of the information highway are tools that all older adults can use to remain connected and productive without being affected by age or mobility. And knowing rural older adults, I am sure they will not be left in the dust on the new country roads.

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